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ACCESSION NUMBER: 1996:188511 BIOSIS  
DOCUMENT NUMBER: PREV199698744640  
TITLE: Expression of Ep-CAM in **cervical** squamous  
epithelia correlates with an increased proliferation and  
the disappearance of markers for terminal  
differentiation.  
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SOURCE: American Journal of Pathology, (1996) Vol. 148, No. 3, pp.  
865-875.  
ISSN: 0002-9440.  
DOCUMENT TYPE: Article  
LANGUAGE: English

AB Ep-CAM, an epithelial adhesion molecule, is absent in normal  
**squamous** epithelia but can be detected in some **squamous**  
carcinomas. Using a panel of monoclonal **antibodies** to  
keratinocyte differentiation and proliferation markers, we investigated  
the association of Ep-CAM expression with differentiation-related and/or  
neoplastic changes in **cervical** epithelium. Normal endocervical  
glandular epithelium (both **columnar** and reserve cells) appeared  
strongly positive for Ep-CAM, whereas ectocervical **squamous**  
epithelial cells did not express this molecule. Expression of Ep-CAM (in  
basal cells) was sometimes observed in morphologically normal  
ectocervical  
tissue but only in areas bordering **cervical** intraepithelial  
neoplasia (CIN) lesions. At the early stages of neoplasia the expression  
of Ep-CAM was regularly present in **squamous** epithelium, in  
general consistent with the areas of atypical, undifferentiated cells.  
Thus, in CIN grades I and II, the basal/suprabasal layers of the  
epithelia  
were positive, whereas in CIN grade III lesions, up to 100% of the cells,  
over the whole thickness of the epithelium sometimes excluding the very  
upper layers, expressed Ep-CAM. A clear increase, not only in number of  
positive cells but also in levels of Ep-CAM expression (intensity) was  
observed during progression from CIN I to CIN III. Expression of Ep-CAM  
in  
ectocervical lesions did not coincide with a reappearance of the simple  
epithelium cytokeratins (CK8 and CK18). On the other hand, expression of  
Ep-CAM in atypical cells of CIN lesions correlated with the disappearance  
of CK13, which normally marks cells undergoing **squamous**  
differentiation. As was shown with Ki-67, a marker for proliferating cell  
populations, the areas of Ep-CAM expression were also the areas of  
enhanced proliferation. Cells expressing Ep-CAM did not express  
involucrin, a marker for cells committed to terminal differentiation. In  
the majority of both **squamous** and adenocarcinomas of the  
**cervix** a strong expression of Ep-CAM was observed, although some  
decrease in the expression (both the intensity and the number of positive  
cells), as compared with CIN III lesions, was observed in the areas of  
**squamous** differentiation. This study demonstrates that the  
expression of Ep-CAM in **cervical squamous** epithelium  
is associated with abnormal proliferation of cell populations that are  
not

## Contributions of immunocytochemistry to gynaecological pathology.

Kurman RJ.

Clin Obstet Gynaecol. 1984 Apr;11(1):5-23.

The immunoperoxidase technique is relatively simple and inexpensive, and once established it can be easily adapted to any number of antigens. The method has already been employed to localize a wide variety of enzymes, proteins, polypeptide hormones, steroid hormones, immunoglobulins, and viral and protozoal antigens. The only limitations of the immunoperoxidase technique are the availability of specific antisera and the ability of the cellular product being tested to retain its antigenicity through the process of fixation, dehydration and embedding. It is now apparent that, with the exception of a few labile antigens, most cellular products survive routine fixation to the extent that sufficient antigenic determinants remain to permit their recognition. Meaningful interpretation of the results, however, depends on thoughtful evaluation of the methodology. This requires careful immunological and tissue controls. Standardization of antibodies used as reagents, particularly in the rapidly burgeoning field of monoclonal antibodies, is essential in order that studies performed by different laboratories can be compared. The application of immunocytochemistry to the study of gynaecological disease has been relatively recent, but it is apparent that this technique is a powerful tool with which to confirm and extend the morphological observations made over the last century. By taking advantage of the high degree of specificity of antibodies, immunocytochemistry has assumed a prominent role as a highly specific 'special stain'. Of perhaps even greater significance is the use of this technique to explore and characterize the biochemical features of cells within the framework of conventional morphology. Thus, gynaecological pathology is on the threshold of a new era in which the pathologist can now study the cellular manifestations of disease on both a functional and a morphological basis.

Immunohistochemical approaches to diagnosis in gynecologic pathology.

Beckstead JH.

Clin Lab Med. 1995 Sep;15(3):727-42.

Department of Pathology, Oregon Health Sciences University, Portland, USA.

Immunohistochemical techniques have become widely used in gynecologic pathology in recent years. This article is divided into sections of major anatomic areas of gynecologic interest, and each section discusses specific pathologic questions approachable by these studies. A description of reagents, as they apply in each case, is also included.

Publication Types:

Review

Review, Tutorial

MeSH Terms:

Biopsy

Cervix Neoplasms/diagnosis

Fallopian Tubes/pathology

Female

Genital Neoplasms, Female/\*diagnosis

Human

Immunohistochemistry/\*methods

Male

Ovarian Neoplasms/diagnosis

Pregnancy

Trophoblastic Neoplasms/diagnosis

Uterine Neoplasms/diagnosis

Vimentin/analysis

Vulvar Neoplasms/diagnosis

Substances:

0 (Vimentin)

TERMINOLOGY FOR EPITHELIAL ABNORMALITIES OF THE  
UTERINE CERVIX.

FRIEDEL GH.

Am J Clin Pathol. 1965 Sep;44:280-2.

Keywords:

- \*CERVIX NEOPLASMS
- \*CERVIX UTERI
- \*CLASSIFICATION
- \*EPITHELIUM
- \*GYNECOLOGIC DISEASES
- \*HISTOLOGY
- \*NOMENCLATURE
- \*PATHOLOGY

ooks / Serials / AVs :

Item 9 displayed (out of 16 found).

For this item only:

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Origin of premalignant lesions of cervix uteri / M. Coppleson, B. Reid.

Coppleson, M.

Reid, B.

In: Taymor, M.L. and Green, T.H., Jr. Progress in Gynecology, Vol. 6. New York, Grune and Stratton, 1975.

Publisher: 1975.

Description: p. 517-539.

MeSH Terms:

Cervix Neoplasms

Colposcopy

Diagnosis

Age Factors

Coitus

Disease

Endoscopy

Histology

Laboratory Techniques and Procedures

Neoplasms

Physical Examination

Sex Behavior

Keywords:

Cervical Cancer

Examinations And Diagnoses

Cancer

Diseases

Laboratory Procedures

Physical Examinations And Diagnoses

Notes: Includes bibliographical references. (37 ref.)

The existing literature concerning cervical cancer has been searched and a summary is presented of current knowledge of the pathology, epidemiology, and possible etiological agents of the disease. It is hypothesized that metaplasia is the key process in the development of squamous cancer of the cervix. This process transforms columnar

epithelium to normal squamous epithelium, a fact distinguishable through colposcopy. Occasionally, as a result of some factor introduced through coitus, the resultant squamous epithelium is atypical. Such atypical metaplasia will develop into cervical cancer. Formation of this hypothesis regarding the biology of the transformation some developed from a combination of colposcopic, histological, and experimental studies. The main biological agent introduced during coitus and believed to be instrumental in the development of cervical lesions is the herpes simplex virus. Colpophotographs of developing cervical cancer are presented. Emphasized use of colposcopy and a multidisciplinary approach could result in recognition of critical stages earlier in the process of in cervical cancer development.

Report Number: PIP 755480

UI: 100986368

Reserve cell hyperplasia, squamous metaplasia and epidermization / E. Von

Haam, J.W. Old.

Von Haam, E.

Old, J. W.

In: Gray, L.A. ed. Dysplasia, carcinoma in situ and micro-invasive carcinoma of the cervix uteri. Springfield, Illinois, Charles C. Thomas, 1964.

Publisher: 1964.

Description: p. 41-82.

MeSH Terms:

Age Factors  
Cervix Neoplasms  
Cervix Uteri  
Estrogens  
Histology  
Neoplasms  
Research  
Uterus  
Women  
Biology  
Demography  
Disease  
Endocrine System  
Genitalia  
Genitalia, Female  
Hormones  
Laboratory Techniques and Procedures  
Physiology  
Population  
Population Characteristics  
Pregnancy  
Urogenital System

Keywords:

Cancer  
Cervical Cancer  
Cervix  
Clinical Research  
Demographic Factors  
Diseases  
Laboratory Procedures  
Research Methodology  
Uterine Effects

Notes: Includes bibliographical references. (78 ref.)

Reserve cell hyperplasia, squamous metaplasia, and epidermization are discussed. 1000 consecutive cervical specimens were examined to evaluate the importance of reserve cell hyperplasia and squamous metaplasia of the cervix as to their incidence and relationships to other diseases of the cervix including cervical cancer. Included were 108 borderline lesions, carcinomas in situ and invasive carcinomas. The data agree

essentially with those appearing in the literature indicating that reserve cell hyperplasia is frequently present in the human cervix and represents a common lesion associated with various inflammatory processes of the cervix, cervical polyps, and uterine fibroids. The theory that reserve cell hyperplasia is a result of a proliferations of multipotential intermitotic cells, which under normal conditions serve as the germinative or basal cells of the normal columnar epithelium of the endocervical surface and the endocervical glands, is favored. Under continuous environmental stimuli, reserve cell hyperplasia has a tendency to transform into squamous metaplasia, which perhaps represents an end stage of epithelial differentiation and is incapable of reverting to columnar epithelium. It has been established that reserve cell disorders are present with much greater frequency in cervixes which show established in situ carcinoma. It is believed that the majority of reserve cell disorders are the result of benign stimuli alone and that only a small number are the result of neoplastic stimulation.

Report Number: PIP 640400